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| EXAMINER | |
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| RUBY, TRAVIS C | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/590,913 | TONNELIER, PIERRE | |
| | Examiner | Art Unit | |
| | TRAVIS RUBY | 3744 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. The drawings are objected to because the images are of poor quality which renders it difficult to see all of the details of the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Figure 5c should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because it recites phrases which can be implied and uses legal phraseology. Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities:

Page 10 lines 12-20. The description of Figure 6a and Figure 6b both recite "shows a second heat exchanging device for the constructional unit according to the invention, according to the prior art, in a further embodiment". From this description it is unclear as to whether this Figure is prior art or part of the invention. It is not possible for the Figure to be both. Clarification of the description is needed.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The term "partially" in claim 1 line 2 & 5 is a relative term which renders the claim indefinite. The term "partially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

10. The term "essentially" in claim 1 line 8 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how close to "no fractions of gaseous medium" are not allowed to pass through.

11. The term "essentially" in claim 2 line 2 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how close to "one above the other" the heat exchangers are arranged.

12. The term "essentially" in claim 3 line 3 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide

a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how close to "one above the other" the heat exchangers are arranged.

13. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

a. In the present instance, claim 5 recites the broad recitation “regulating device can be set”, and the claim also recites “preferably continuously” which is the narrower statement of the range/limitation.

b. In the present instance, claim 6 recites the broad recitation “one portion of the first regulating device bears against at least one portion of the first heat exchanging device”, and the claim also recites “preferably in contact with at least one portion of the housing” which is the narrower statement of the range/limitation.

c. In the present instance, claim 7 recites the broad recitation “one portion of the first regulating device bears against at least one portion of the housing”, and the claim also recites “preferably in contact with at least one portion of the housing” which is the narrower statement of the range/limitation.

d. In the present instance, claim 16 recites the broad recitation “throughflow devices have a length which is between 200mm and 900mm”, and the claim also recites “preferably between 300 mm and 800 mm” which is the narrower statement of the range/limitation, and the claims further recites "particularly preferably between 400 mm and 600 mm" which is an even narrower statement of the range/limitation.

14. Claim 7 recites “one portion of the first regulating device bears against at least one portion of the housing” and then recites “preferably in contact with at least one portion of the housing”. It is unclear how these two portions of the housing are distinguished from one another.

15. The term "essentially" in claim 12 line 3 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how close to "parallel" the two heat exchangers are arranged.

16. The term "considerably" in claim 13 line 4 is a relative term which renders the claim indefinite. The term "considerably" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how much the “width and depth” are reduced compared to the length.

17. Regarding claim 17, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

18. The term "essentially" in claim 22 line 3 is a relative term which renders the claim indefinite. The term "essentially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to how close to a "rectangular cross section" the outlet device needs.

## *Claim Rejections - 35 USC § 102*

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

20. Claims 1-2, 5, 7-12, 14-15, 17-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US2096967).

Johnson teaches:

**Re Claim 1.** A constructional unit (Figure 1) for a heat exchanging device, with at least one housing in which a gaseous medium is routed at least partially along a predetermined path (refs 23 and 26) (Column 3 lines 33-38), with an inlet device (ref 30) for the gaseous medium (Column 3 lines 42-50), with at least one first heat exchanging device (ref 18, Column 3 line 67 to Column 4 line 2), with at least one second heat exchanging device (ref 100, Column 4 line 70

to Column 5 line 3), with at least one first regulating device (ref 37) which at least partially influences the direction of flow of the gaseous medium and which can be set in at least two different positions (Column 3 lines 52-62), and with an outlet device (ref 40) for the gaseous medium (Column 4 lines 34-45), wherein, in at least one first position of the first regulating device, essentially no fractions of the gaseous medium are routed through the first heat exchanging device (Column 3 lines 52-62, Figure 1 illustrates that the gate 37 can block air flow to either of the two flow passages).

(Note: Johnson reference does not have column numbers labeled, Column 3 is the left column on Page 2 and subsequent columns are incrementally referred to in the order presented)

**Re Claim 2.** The constructional unit as claimed in claim 1, wherein, in at least one second position of the first regulating device, essentially no fractions of the gaseous medium are routed through the second heat exchanging device (Column 3 lines 52-62, Figure 1 illustrates that the gate 37 can block air flow to either of the two flow passages).

**Re Claim 5.** The constructional unit as claimed in claim 1, wherein the first regulating device can be set preferably continuously between the first position and the second position (Column 3 lines 52-62, Column 5 lines 9-38).

**Re Claim 7.** The constructional unit as claimed in claim 1, wherein at least one portion of the first regulating device (ref 37), in at least one position, bears against at least one portion of

the housing and is preferably in contact with at least one portion of the housing (Figure 1, Column 3 lines 52-62, Column 5 lines 9-38).

**Re Claim 8.** The constructional unit as claimed in claim 1, wherein the first regulating device is accommodated in a first subspace of the housing (ref 30), the first subspace of the housing being arranged upstream of the first and the second heat exchanging device in the direction of flow of the gaseous medium (Figure 1, Column 3 lines 42-50).

**Re Claim 9.** The constructional unit as claimed in claim 1, wherein a second subspace (ref 40) of the housing is provided, which is arranged downstream of the first and the second heat exchanging device in the direction of flow of the gaseous medium (Figure 1, Column 4 lines 34-45).

**Re Claim 10.** The constructional unit as claimed in claim 1, wherein at least a partial intermixing of the gaseous medium passing through the first and the second heat exchanging device takes place in the second subspace (Figure 1, Column 4 lines 34-45, Column 5 lines 9-38).

**Re Claim 11.** The constructional unit as claimed in claim 1, wherein at least one deflection device (ref 50) for the gaseous medium is provided in the second subspace (Figure 1, Column 4 lines 34-45, Column 5 lines 9-38).

**Re Claim 12.** The constructional unit as claimed in claim 1, wherein the first heat exchanging device and the second heat exchanging device are arranged essentially parallel to one another (Figure 1 illustrates that the heat exchangers are parallel).

**Re Claim 14.** The constructional unit as claimed in claim 1, wherein a third heat exchanging device (ref 42) is provided (Column 4 lines 17-23).

**Re Claim 15.** The constructional unit as claimed in claim 1, wherein at least one heat exchanging device (ref 100) has a multiplicity of throughflow devices for a refrigerant (4 line 70 to Column 5 line 3).

**Re Claim 17.** The constructional unit as claimed in claim 1, wherein the third heat exchanging device is a heating device selected from a group of heating devices which contains CO2 heat pumps, heatings utilizing exhaust gas heat, fuel heatings, auxiliary heatings, electrical heatings (ref 42, Column 4 lines 17-23).

**Re Claim 18.** The constructional unit as claimed in claim 1, wherein the third heat exchanging device has a cross-sectional area which is reduced with respect to that of the first heat exchanging device (ref 42 in Figure 1 is smaller than ref 18, Column 4 lines 17-23).

**Re Claim 19.** The constructional unit as claimed in claim 1, wherein the first heat exchanging device is a heating device (ref 18, Column 3 line 67 to Column 4 line 2).

**Re Claim 20.** The constructional unit as claimed in claim 1, wherein the third heat exchanging device is arranged downstream of the first heat exchanging device in the direction of flow of the gaseous medium (ref 42 in Figure 1, Column 4 lines 17-23).

**Re Claim 21.** The constructional unit as claimed in claim 1, wherein a multiplicity of outlet devices for the gaseous medium are provided (Figure 1 ref 40 and 49, Column 4 lines 34-41).

**Re Claim 22.** The constructional unit as claimed in claim 1, wherein at least one outlet device has an essentially rectangular cross section (Figure 1 shows that ref 40 and 49 are rectangular, Column 4 lines 34-41).

**Re Claim 23.** The constructional unit as claimed in claim 1, wherein at least one outlet device has a second regulating device (ref 50) for the emerging gaseous medium (Column 4 lines 34-51).

**Re Claim 24.** The constructional unit as claimed in claim 1, wherein the constructional unit has, furthermore, a blower device (ref 34, Column 3 lines 47-50).

***Claim Rejections - 35 USC § 103***

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

22. Claim 3, 4, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US2096967) in view of Engel (US3807490).

**Re Claim 3 & 4.** Johnson teaches two heat exchangers (Figure 1) but fails to specifically teach that the first heat exchanging device and the second heat exchanging device are arranged spatially essentially one above the other and the first heat exchanging device is arranged above the second heat exchanging device. Engel teaches a first heat exchanging device (ref 8) and a second heat exchanging device (ref 7) are arranged spatially essentially one above the other with the first heat exchanging device arranged above the second heat exchanging device (Figure 1, Column 2 line 65 to Column 3 line 3). In view of Engel's teachings, it would have been obvious to one of ordinary skill in the art to arrange the first heat exchanger above the second heat exchanger in order to reduce the distance between the two since it allows for less coolant piping to used in the air conditioning system. It would also have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the first heat exchanger above the second heat exchanger, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

**Re Claim 13.** Johnson teaches a first heat exchanger but fails to specifically teach at least one heat exchanging device has a predetermined length and a width and depth which are reduced considerably with respect to this length. It would have been an obvious matter of design choice to make the width and depth smaller than the length in order to reduce the size of the heat exchanger to be more compact for a vehicle, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1995).

**Re Claim 16.** Johnson teaches a heat exchanger with throughflow devices (4 line 70 to Column 5 line 3) but fails to specifically teach the throughflow devices have a length which is between 200 mm and 900 mm, preferably between 300 mm and 800 mm and particularly preferably between 400 mm and 600 mm. It would have been an obvious matter of design choice to make the length between 400mm and 600mm in order to achieve the maximum heat exchange, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1995). It also would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the optimal length range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

23. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US2096967) in view of Iritani et al (US5299431).

**Re Claim 6.** Johnson teaches a regulating device (37) in contact with the housing (as seen in Figure 1) but fails to specifically teach at least one portion of the first regulating device, in at least one position, bears against at least one portion of the first heat exchanging device. Iritani et al teaches at least one portion of the first regulating device (ref 159), in at least one position, bears against at least one portion of the first heat exchanging device (ref 207) (Figure 11, Column 18 lines 50-65). In view of Iritani et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to make the regulating device bear against the first heat exchanging device since it ensures that no air is leaked passed the regulating door and that the air flow goes in the direction intended. It increases reliability in the system.

***Conclusion***

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki et al (US4546617) teaches an air-conditioning system for vehicles with all the limitations of claim 1. Suzuki et al has a regulating door that controls air flow through two heat exchangers and downstream of the first heat exchanger is a second heat exchanger for heating. Ripple et al (US4913034) teaches a vehicle air conditioner with heat exchanger in parallel flow. Uemura et al (US6311763B1) teaches a vehicle air conditioner that has multiple flow outlets and dampers controlling the flow of each outlet. Alber et al (US2003/0217822A1, as cited by applicant) also teaches the majority of the claimed invention.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRAVIS RUBY whose telephone number is (571)270-5760. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681 or 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Travis Ruby/
Examiner, Art Unit 3744

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744